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## SOME MISSISSIPPIAN CERAMICS FROM ARKANSAS, IN THE CLEVELAND MUSEUM OF NATURAL HISTORY

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*The Cleveland Museum of Natural History*

*with*

## AN ANALYSIS OF THE CARBONIZED PLANT REMAINS

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### ABSTRACT

Reanalysis of Cleveland Museum of Natural History collections has revealed evidence for an early agricultural occupation of an archaeological site in northeastern Arkansas. This Mississippian culture mound, dated to A.D. 1050, showed distinctive ceramics with ethnobotanical material suggesting a revision of earlier theories of prehistoric diffusion in the eastern United States.

During December of 1973, as part of my duties as Curator of Archaeology for The Cleveland Museum of Natural History, I assisted in the transfer of a considerable amount of archaeological and ethnological material from a soon-to-be demolished storage building into the Museum's permanent research collections. Much of this material had been donated by private parties during the nineteen thirties, and had been accessioned prior to 1936. It was never really looked at by any professional archaeologist until the spring of 1974.

In one large cardboard box, taped shut, and located in a deep storage midden in a back closet, were two shell-tempered, looped-handled bowls: a large intact bowl (fig. 1) with an average lip thickness of about 4.7 mm ( $s^2 = 1.9$  mm) and a smaller, similar partially

reconstructed bowl (fig. 2) with an average lip thickness of 3.9 mm ( $s^2 = 1.8$  mm). The smaller vessel has traces of red fugitive slip. The vessels both bore the C.M.N.H. catalog number 9674. References to the accession catalog indicated only that the two vessels were from Cross County, Arkansas, and had been donated together to The Cleveland Museum of Natural History by a Mr. H.P. Shaw some time between 1927 and 1932. Interesting, but not really significant.

Working with a graduate assistant during February of 1974, I continued sorting through the older materials. Within a large cardboard box marked as coming from a mound on Weeden Island in Tampa Bay, and containing a series of shell (*Busycon?*) implements, fragments of human skeletal material, and a few Franklin Plain and Carabelle Incised sherds (Willey 1949:v.113, p.479) was a small metal box about 9 x 4 x 2 inches rusted shut. Inside this small metal cigarette or cigar box were three ceramic sherds, a series of botanical materials including nut shell, maize cob, various seeds which I could not recognize even to family, and several pieces of wood fiber about 3 inches long and approximately 3/4 inches in diameter. Several of the latter appeared to have been varnished. Included within the metal box was a worn, folded, and somewhat rust-stained note, which reads:

9674

— Two pots and seeds

acca; H.P. Shaw

collected by — Jones [1 — 7] below ground at More's Md. about four miles S. of Parkman in Cross Co., Arkansas on E. Side of the river.

These pots were found together and were dug out w— the seeds and shavings in the bigger pot made of mixed clay and [clam] shells. The small clay shards were found under these pots and the big broken shard with lines scratched was in the dirt above.

While there is a village named Parkman in Ohio (about 25 miles ESE of Cleveland) there is only a Parkin in Cross County, Arkansas. While there are several rivers in Cross County, there is only one major one: the St. Francis. While C.B. Moore operated upon local mounds, the only mound he reported which was about four miles south of Parkin on the east side of the St. Francis was the *Rose Mound* (Moore, 1910 :276-303). The note in *The Archaeological Survey of the Lower Mississippi Valley* (Phillips, Ford and Griffin, 1951 :278) that Rose had been severely potted since Moore's day lent some support to the notion that The Cleveland Museum of Natural History had obtained material probably assignable to the Rose Mound.



Figure 1. Large shell-tempered vessel probably of Mississippian Plain type, Mound Field variety, within which the carbonized botanical remains were found. CMNH Accession No. 9674.



Figure 2. Small red-slipped vessel (partially reconstructed) of Old Town Red type, associated with the large bowl within the mound. CMNH Accession No. 9674.



The two undecorated small rimsherds in the metal box were clay or grog tempered and can probably be considered representative of some variant of Baytown Plain (Phillips, Ford and Griffin, 1951 :270). Both of these rimsherds have a relatively thin lip thickness ( $\bar{x}$  = 9.0 mm) and display a hard compact paste. They seem equivalent to what Phillips (1970:57) has called the *West Lake* variety of Baytown Plain. The larger sherd was coarsely shell-tempered as were the two complete vessels. It is not a complete rim but probably comes from just below the lip—it is broken along a medium wide incised line. Below this break are two parallel horizontal (?) incised lines about 1.5 mm wide, 0.8 mm deep, and 8.8 mm and 9.2 mm apart. Below these the sherd curves out toward the shoulder and is roughly broken about 17 mm below the lowest incised line. This neck sherd has a very Coles Creek look although if it truly overlies the Neeleys Ferry Plain vessels that would suggest a stratigraphic problem. A more reasonable attribution may be suggested, however, as Coles Creek is not generally found as far north as Cross County, Arkansas (J.B. Griffin: personal communication). This sherd can easily be encompassed within what Phillips has characterized as the Mound Place variety of the type Mound Place Incised (Phillips, 1970: 135, fig. 59c).

There is little question that the two complete shell-tempered vessels with loop handles can be considered some variety of Neeleys Ferry Plain (Phillips, Ford and Griffin, 1951 :287). These Mississippian Plain vessels do not appear quite thin enough to meet Williams (1954) or Phillips (1970:132) criterion for Mississippian Plain, var. Coker. They both might fall within what Phillips would consider Mississippian Plain, var. Mound Field although adequate quantified data for certain attribution are not presented in that monumental report (Phillips, 1970:132-3). The smaller vessel with traces of red slipping should thus represent an example of Phillips' Old Town Red, var. Old Town (Phillips, 1970:145).

On both of these vessels, the paired loop handles are undecorated and are diametrically opposed on the vessels. The lower loop end is riveted through the vessel wall and luted on the interior. The upper handle end is attached by luting on the rim at the lip. On both vessels the loop handles rise slightly higher than the rim itself although erosion and breakage along much of the vessel rim make any more quantified statement spurious. These loop handles are virtually identical to one illustrated by Phillips, Ford and Griffin (1951 :228) which came from

the lower levels of the Rose Mound. They are similar to the loop-handled Neeleys Ferry Plain vessels reported from the early Mississippian Banks Mound 3 dated A.D.  $1075 \pm 75$ . Similar vessels formed part of a richer ceramic assemblage with dates of A.D.  $710 \pm 150$ , A.D.  $930 \pm 150$ , and A.D.  $1100 \pm 110$  in Crittenden County, Arkansas (Perino, 1967:69).

The wood shavings from the large pot were identified by Dr. O. Elzam of the Case Western Reserve University Biology Department as most likely some non-twigg portion of *Carya*, possibly *ovata*. I shaved off all the varnished surfaces and ended up with a handful of match-stick-sized fragments. These were then washed with a variety of solvents, washed with acid and base, and rewashed several weeks with distilled inert water by Dr. A. Sumodi of the C.W.R.U. Radio-carbon Lab. These wood fragments were then combusted and the carbon content converted to benzene, and the  $C^{14}$  content counted. The resultant date (CWRU-172) is A.D.  $1050 \pm 65$  or BP 900. Until this date was returned it was uncertain whether the wood represented some rather recent contamination, or whether the association reported on the C.M.N.H. accession note was valid. It now appears most reasonable to assume that the date on the wood shavings also refers to the ceramics within which Mr. Jones claimed to have found them.

This suggests that the other ethnobotanical materials can also be referred to an early Mississippian period of A.D. 900-1100, and that there might be some value in obtaining the evaluation of a competent ethnobotanist concerning their specific identification and significance. Dr. Richard I. Ford of the University of Michigan Museum of Anthropology Ethnobotanical Laboratory was kind enough to consent to analyze these materials. His description and discussion are appended to this report.

Before beginning any extended discussion on the archaeological significance of these rediscovered ceramics and their contents, it is necessary to inquire more closely as to their context. Dr. J.B. Griffin (personal communication 21 May 1974) has pointed out that there is

...very little control over the time at which the seeds and shavings were utilized or how they got into the vessel. While it is not unreasonable to suggest that the site could be the Rose Mound, I would say that if the gentleman went by road from Parkin to the site that it would not be much more than two miles but if he went by water it would be probably closer to four miles. Down river from the Parkin site there is another site (12-N-6) which we identified as the Westmorland site. I don't see how you could be sure what site these materials come from.

In addition to Westmorland, the Lower Mississippi Valley Survey also identified the Welshans Place site (12-N-5) also on the east side and about two miles further down river from the Westmorland site. The Westmorland site however yielded only scanty amounts of middle Baytown ceramics (Phillips, Ford and Griffin, 1951: fig. 20) while the Welshans Place site, aside from lying beyond the 4-mile limit was apparently neither visited by Moore (Moore 1910), nor contained any ceramics which predated the early Mississippian horizon (Phillips, Ford and Griffin, 1951: fig. 20). The Rose Mound site not only produced materials from late Baytown through late Mississippian, but gave evidence of an early Mississippian component with shell-tempered plain ceramics which differed somewhat from typical Neeleys Ferry Plain (Phillips, Ford and Griffin, 1951: 105-110, 287-88; Phillips, 1970:933). As Phillips (1970:246) later noted,

In a large surface collection from the Rose Mound (12-N-3) made in 1940, there were only five clay-tempered sherds out of a total of 1416 (Phillips, Ford and Griffin 1951: fig. 21, sample no 12-N-3/A). A later test excavation in 1947 revealed a 100% pure 'clay-tempered' component with sherd yield per level as high as those in the overlying shell-tempered levels and plow-zone (*ibid.* fig. 53)

Given available information, it seems quite reasonable to accept the information in the C.M.N.H accession note accompanying the ethnobotanical material and the three sherds in the metal box. The stratigraphic sequence thus indicated would suggest a late Baytown component overlain by an early Mississippian occupation with plain loop-handled vessels dated at A.D.  $1050 \pm 110$ , below incised Mississippian Ceramics. This sequence certainly conforms to the earlier ceramic chronology developed by Phillips, Ford and Griffin (1951) and should be capable of being placed within the more detailed framework recently proposed by Phillips (1970). If there are indeed sequent occupations, the only ceramics which can be assigned to a particular phase would be the Mississippian Plain (var. Mound Field, and var. Old Town) bowls. These could easily represent a portion of Phillips' revised Parkin Complex, the absence of Parkin Punctate and Barton Incised being the result of sampling error. With the association of the radiocarbon of A.D.  $1050 \pm 110$  these shell-tempered vessels would fall into the Cherry Valley Phase (Phillips 1970, 930-33). While this date may seem somewhat early for Mississippian Plain ceramics in the St. Francis area it agrees with Perino's dates at

Cherry Valley and Banks (Perino, 1967:67). Phillips, discussing this Cherry Valley phase, has predicted that as new data continue to accumulate, such dates will seem less a special case (1970:930).

It is not, unfortunately, certain from the Cleveland Museum's note of Mr. Shaw's recollection of Mr. Jones' report, that three distinct components are indeed present. Phillips (1970:914), following earlier suggestions by Williams for southeast Missouri, recognizes a late pre-Mississippian Black Bluff horizon marked by a plain "clay-tempered" ware with a harder, more compact paste than is normal for Baytown Plain in this region. Indeed, Phillips suggests two distinct late Baytown phases flanking the lower St. Francis area, both characterized by a preponderance of Baytown Plain with Coles Creek "earmarks." Phillips (1970: 916-17) cites Hester Davis's 1967 characterization of the Toltec phase occupying the area between the St. Francis and the Mississippi as containing components with Mississippian settlement patterns associated with clay-tempered Baytown and shell-tempered Mississippian Plain ceramics.

If the materials herein described from the Cleveland Museum which are tentatively assigned to the Rose Mound site represent the ceramic assemblage from a single occupation, their relative stratigraphic occurrence within the component may be considered unimportant. In that case they should probably be assigned to this Toltec phase. In this event the radiocarbon date of A.D. 1050  $\pm$  110 should represent a reasonable (if not conservative) temporal position for the early Mississippian transition in the St. Francis basin. Phillips has pointed out (1970 :960) that the present state of calendrical dating in the lower Mississippi valley need not be taken too seriously in its present state of development. He postulates the first appearance of Mississippian ceramics in the Yazoo region (at about A.D. 1000) in his Crippen Point Phase (1970 :fig 450A). This suggestion has received some support from the recent excavations at the Winterville site in the Yazoo basin where Brain has recovered Mississippian ceramics late in a Crippen Point phase dated A.D. 1050-1200 (Brain, 1970: 276,304). While one might presume that such ceramics would be earlier upstream, it seems preferable at this point to accept Phillips' (1970:930) cautious prediction that,

As other early Mississippi data accumulate, as they are bound to do, . . . it may turn out that Mississippian Culture was developing over a broad front with interconnections that were not exclusively in a one-way, north-south direction.



## CARBONIZED PLANT REMAINS FROM CROSS COUNTY, ARKANSAS

Museums are fascinating places. Their lure captivates the dreams of children and stimulates the imagination of adults. But to the scientist they are the foster homes of displaced discoveries. It is only in their confines that the archaeologist can reexamine the excavated artifacts of a predecessor and more often than not "excavate" once again long forgotten and unreported relics of man's prehistoric past. Such was the fortuitous discovery by Dr. David S. Brose of The Cleveland Museum of Natural History when he salvaged from an old museum warehouse an unpublished Neeleys Ferry Plain vessel containing several carbonized plant fragments. They were submitted to the Ethnobotanical Laboratory for identification.

While these charred remains are an unrepresentative sample of the plants used by early Mississippian peoples, nevertheless they do contribute to an accumulation of similar data that together are enlightening our knowledge of subsistence patterns 1000 years ago.

In his report Brose documents the inadequate records accompanying these plant parts. It is evident that they do come from a mound located south of Parkin in Cross County, Arkansas. Whether the actual site situated on the east side of the St. Francis River was the famous Rose Mound remains uncertain.

The remains consist of two butternut shells, one pawpaw seed, three bean cotyledons, three kernels of corn, and three pieces of cobs. Why they were in this pot is not clear; perhaps their excellent state of preservation attracted the attention of the excavator and he placed them there out of harm's way.

The two nut shells, weighing 3.3 g, are butternuts, *Juglans cinerea* L. From a phytogeographical point of view this is an interesting identification. Butternuts are common throughout the midwest, including southeastern Missouri, but are rare in Arkansas. Aside from two or three disjunct populations their main occurrence in this state is along the riverbottom and alluvial benches of the St. Francis River. Here butternuts are a common element in the bottomland hardwood forests. This archaeological find supports the hypothesis that the modern pattern of distribution existed in the early part of the tenth century A.D. as well.

The nut, an ovoid fruit 50 to 80 mm long, ripens in September and



October. It contains a good vegetable protein and is an excellent source of protein but does not store well for long periods of time without becoming rancid. As a consequence it may have been necessary to process these tasty nuts soon after they ripened by removing the thin hull and extracting the meat from the cracked shell. The oil could be separated from the meat by boiling. Butternuts undoubtedly contributed only a minor portion of food to the prehistoric diet. The trees are rarely found in groves, most often singly, and each mature tree produces a good crop of nuts every second or third year at most. A thrifty tree yields only 1/4 to 1 bushel of nuts (Fowells 1965:208-10). Unless simultaneous access to many trees is available, a family, much less a village, would benefit little if it attempted to rely on butternuts.

The pawpaw, *Asimina triloba* L. is another component of bottom-land vegetation although it will also occur as a mature fruit-bearing tree in later stages of old field succession. The fruits ripen in the early fall and are a delightful treat. The evidence for their consumption at this site is represented by only one seed measuring 22 mm in length and 11 mm in width. It is well within the range of modern examples. Pawpaw seeds have been identified from a number of Mississippian sites, including the neighboring Parkin Site (Cutler and Blake 1973:9-10).

Beans and corn represent the only evidence of cultivated plants. The three beans, *Phaseolus vulgaris* L., are all broken. The most complete measures 10 mm by 6.2 mm. The remainder have widths of 6.7 mm and 5.6 mm; their lengths are indeterminable.

Beans are not found in every excavation of Mississippian sites, and actually they may not have been grown by every community. They were a late introduction into the eastern United States, perhaps reaching this area as late as A.D. 900. Long recognized for their protein content and complementary relationship with corn's amino acids, they were not essential to the Mississippian economy everywhere. Other native foods such as acorn (Wilma Wetterstrom, personal communication) have a lysine value that will bolster the nutritional value of corn as well.

The fragmentary condition and small sample of corn permits only a superficial discussion. We know that ethnographic cultures living in the Southeast raised a number of varieties of corn, but to date the phenotypic traits used to define these types have not been distin-

guished for analyzing carbonized archaeological remains. Therefore our categories are artifacts of limited analytical procedures.

The three kernels of corn are similar in size and shape. Although two kernels are lacking their "germ," all have a crescent outline and are wider than they are high (width x height: 11 x 7.9; 7.9 x 6.2; 9.2 x 7.3 mm).

Of the three cobs, one is a segment of connected cupules 15.6 mm long. There are 2.4 cupules per 10 mm of cob length on this and the other two cobs. The broken basal portion has 10 kernel rows and an elliptical cross-section. The kernel rows are even and the butt is unflared. Its median cupule width is 10.1 mm. The tip portion (upper end) has 8 kernel rows and a circular cross-section. The kernel rows are regular and are not strongly paired. Kernel facets are present to the very top of the cob. The median cupule width is 7.8 mm.

Assigning a racial type to this corn can be done only in an evolutionary framework. The low row number (8 and 10 rows), ratio of kernel width to height, and the wide cupules recommend Eastern Complex corn; yet the lack of a flared butt and the broadly separated cupules do not conform with this designation. The reason, of course, is that the classic features of this variety evolved in the east and these samples represent an earlier stage of its development. This corn is not unlike pre-A.D.-1300 maize previously identified from north-eastern Arkansas and southeastern Missouri (Cutler and Blake 1973: 9-10, 41).

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